INFORMATIONAL HANDOUT

FOR

CONTRACTOR

Water Quality Information Handout

Replacement Planting and Irrigation

Contract No. 04-2G3624

04-ALA-92-PM R5.1/R5.8

California Department of Transportation
District 04
Office of Water Quality
111 Grand Avenue, Oakland, CA 94612

November 1, 2013

TABLE OF CONTENTS

Attachments

Disclaimer:
The non-storm water information handout is a guideline and is to be used for informational purposes only. It is not a waiver of the provisions in the National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP), Number CAS 000002, adopted on September 2, 2009. Bidders and Contractors are to make all necessary investigations and examinations to satisfy conditions encountered to perform work and to conform to the requirements of the contract documents and the CGP.

1. Project Information

1A. Project Description

This project will replace the planting and irrigation on State Route 12 in Alameda from post mile 5.1 to 5.8. Construction is anticipated to span four months (120 days) and will include a plant establishment period of three years.

Latitude and Longitude:	37.631920 -122.110680
Construction Start Date	06/01/2014
Construction End Date	12/01/2017
Project Area	12 ac
Disturbed Soil Area	5.73 ac

1B. Receiving Water Bodies

The project's watershed is San Lorenzo Creek-Frontal San Francisco Bay Estuaries, the receiving water, with Ward Creek as a subwatershed, is on the 2010 303(d). Although the Risk Level map depicts the area as high risk for receiving water, San Lorenzo Creek is approximately 3.5 north, flows from the project area likely drain to San Francisco Bay (Lower), the receiving water can be changed from high risk to low risk, thus lowering the project risk level from 2 to 1. San Francisco Bay (Lower) is on the 2010 303(d) of Water Quality Limited Segments for Chlorande, Dieldrin, Dioxin Compounds, Furan Compounds, Invasive Species, Lead (sediment), Mercury (sediment), PAHs (Polycyclic Aromtic Hydrocarbons (sediment), Pestcides (sediment), and Zinc (sediment).

1C. Climate and Rainfall Data

A National Oceanic and Atmospheric Administration (NOAA) weather station located in Oakland, CA was used to obtain an estimated number of rainy days per year and qualifying rain events. The Compliance Storm Event was also downloaded from the NOAA website.

Rainy days per year (precipitation 0.10 inches or greater)	33.2	days
Qualifying rain events per year	11.1	days
Compliance Storm Event (rainfall total for the 5 year, 24 hr storm)	2.25	inches

2. Construction General Permit

A Storm Water Pollution Prevention Plan is required since the disturbed soil area is 5.73 acres.

2A. Risk Level

R factor	193.44
K factor	0.31
LS factor	0.16
Sediment Risk	9.59

Receiving Water Body Risk	Yes/ High
Risk Level	1*

*The risk level was downgraded to risk level 1 from risk level 2. See attachment 3.

3. Temporary Construction Site BMPs

The estimated quantities of temporary construction site BMPs are in the PSE package. Temporary Fiber Rolls to remain permanent.

3A. Run-on Discharges

Run-on discharges are off-site storm water that can potentially run to the site. Run-on discharges should be calculated based on a rainfall intensity for a 2-year 24-hour event per the PPDG. The Rational Method is typically used to calculate run-on discharges.

Equation: $Q=CiA$ where Q = Run-on discharge (cubic feet per second)
C = Runoff coefficient (see HDM Figure 819.2A)
i = 2-year, 24-hour rainfall intensity (inches/hour)

Note: Run-on is anticipated to be minimal; the Contractor needs to verify all run-on for the proposed project.

ATTACHMENT 1
VICINITY MAP

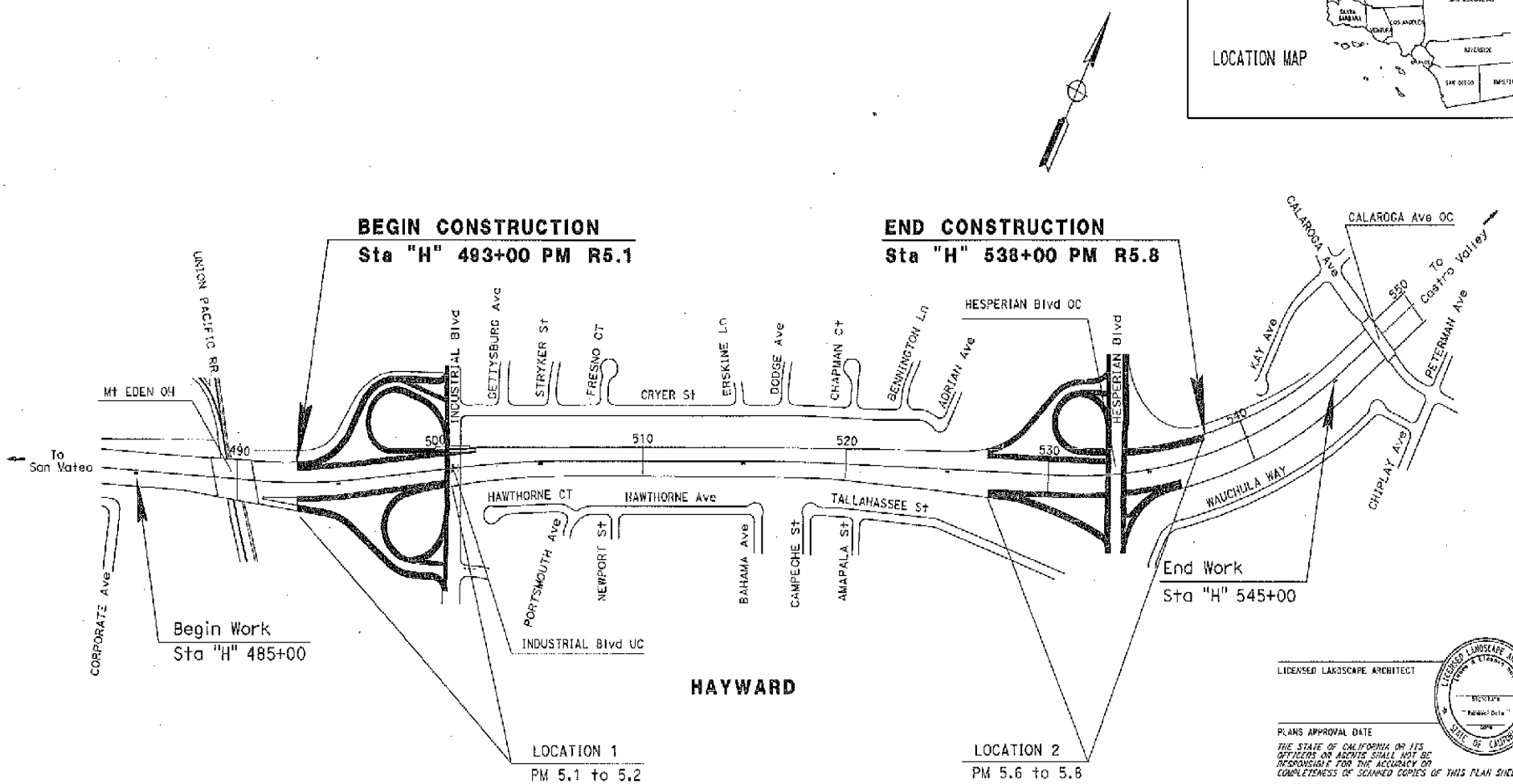
INDEX OF PLANS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN ALAMEDA COUNTY
IN HAYWARD
AT INDUSTRIAL BOULEVARD UNDERCROSSING
AND AT HESPERIAN BOULEVARD OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	92	R5.1/R5.8		



NO SCALE

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

LICENSED LANDSCAPE ARCHITECT

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

CONTRACT No.	04-2G3624
PROJECT ID	0413000224

PROJECT MANAGER: MICHAEL T. NGUYEN
SENIOR LANDSCAPE ARCHITECT: LYDIA MAC

LAST REVISION: DATE PLOTTED => 05-OCT-2013 TIME PLOTTED => 13:44 00-00-00

BORDER LAST REVISED 7/2/2010 | CALTRANS WEB SITE IS: HTTP://WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => s103333 DGN FILE => 0413000221sht001.dgn | UNIT 0793 | PROJECT NUMBER & PHASE 0413000221


to San Francisco
ALA 92 PM R5.1/R5.8
Propose work location
to San Mateo
to San Jose
Nimitz Fwy
W Winton Ave
Hesperian Blvd
Santa Clara St
W Jackson St
Soto Rd
Mission Blvd
W Harder Rd
Harder Rd
Clawiter Rd
Greenwood Park
Softball and Track
MT EDEN
SOUTHGATE
Chabot College
Depot Rd
Mt Eden Cemetery
Industrial Blvd
Gading Rd
Huntwood Ave
Schafer Park
GATEWAY PLAZA DENTAL CLINIC
DMV Office in Hayward
St Rose Hospital
Weekes Community Park
W Tennyson Rd
Tennyson Park
Kaiser
Mendel Biotechnology, Inc
Hayward Shoreline Interpretive Center
Arden Rd
Industrial Pkwy W
Costco Hayward
Industrial Pkwy SW
Gordon E. Oliver Eden Shores Park
Alden E. Oliver Sports Park
Whipple Rd
Regional Shoreline
Catholic Cemeteri Diocese Of Oakland: Holy Sepulchre Cemete

ATTACHMENT 2
RAINFALL DATA

Rainfall Intensity Information: http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif

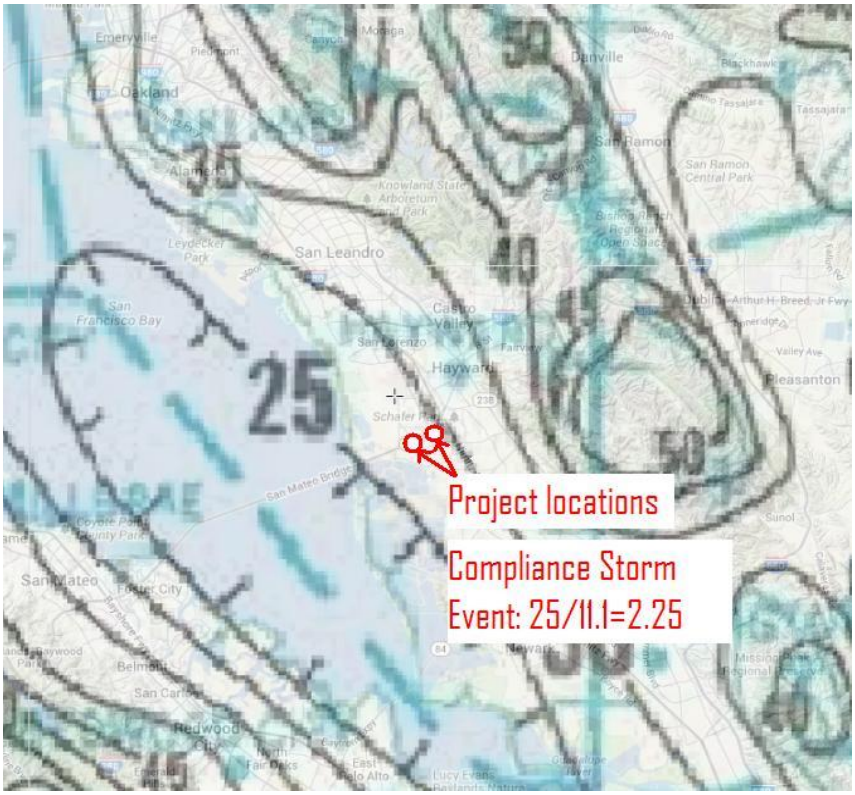
RAINNY DAYS PER YEAR & QUALIFYING RAIN EVENT PER YEAR

OAKLAND WSO AP
Elevation: 6 feet
Start Year: 1948
End Year: 1985
Number of Years: 36

Average number of days per month with precipitation:

Month	>=0.1 in	>=0.5 in
January	6.2	2.4
February	5.2	1.9
March	5	1.4
April	2.7	0.7
May	1	0.1
June	0.3	0.1
July	0.1	0
August	0.2	0
September	0.4	0.1
October	1.7	0.6
November	4.6	1.6
December	5.8	2.1
Yearly Total	33.2	11.1

COMPLIANCE STORM EVENT



ATTACHMENT 3
CONSTRUCTION RISK LEVEL

Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.

http://cfpub.epa.gov/npdes/stormwater/LEW/lewCalculator.cfm

R Factor Value	193.44

B) K Factor (weighted average, by area, for all site soils)

The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.

Site-specific K factor guidance

K Factor Value	0.31

C) LS Factor (weighted average, by area, for all slopes)

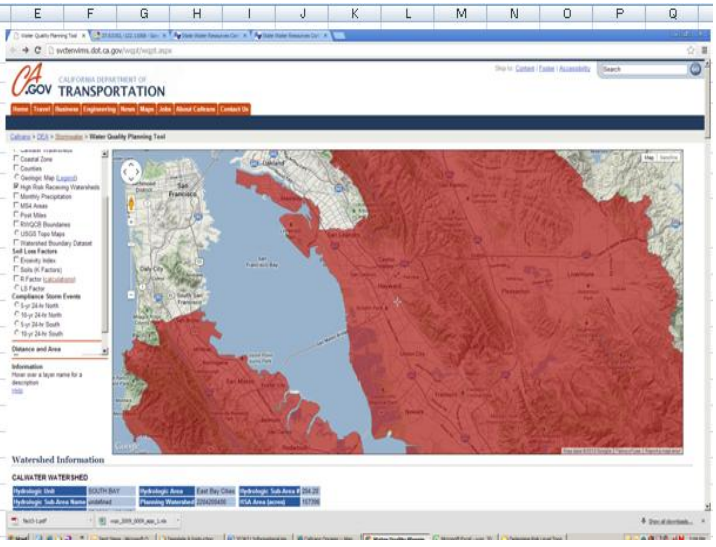
The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.

LS Table

LS Factor Value	0.16

Watershed Erosion Estimate (=RxKxLS) in tons/acre	9.594624
Site Sediment Risk Factor Low Sediment Risk: < 15 tons/acre Medium Sediment Risk: >=15 and <75 tons/acre High Sediment Risk: >= 75 tons/acre	**Low**

A	B	C
Receiving Water (RW) Risk Factor Worksheet	**Entry**	**Score**
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment** (For help with impaired waterbodies please visit the link below) or has a **USEPA approved TMDL implementation plan for**	yes	High
http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml		
OR		
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan)		
http://www.waterboards.ca.gov/waterboards_map.shtml		
Region 1 Basin Plan		
Region 2 Basin Plan		
Region 3 Basin Plan		
Region 4 Basin Plan		
Region 5 Basin Plan		
Region 6 Basin Plan		
Region 7 Basin Plan		
Region 8 Basin Plan		
Region 9 Basin Plan		

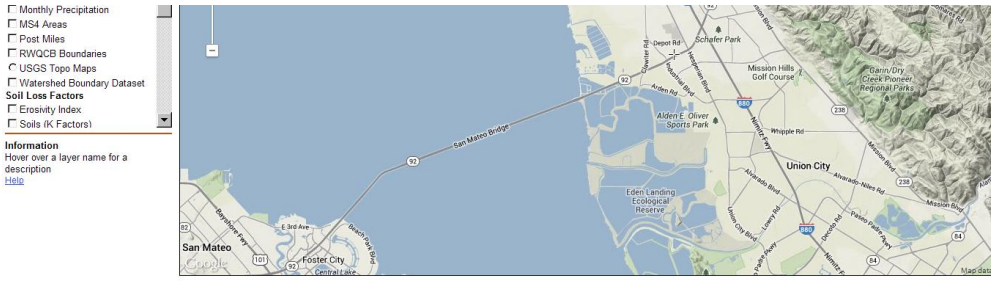


EA 2G362, 04-ALA-92 PM 5.1/5.8

Trang Hoang, 8/28/2013

The project's watershed is San Lorenzo Creek-Frontal SF Bay Est, with Ward Creek as a subwatershed. Although the RL map depicts the area as high risk for receiving water, San Lorenzo Creek is approx 3.5 north and flows from the project area drains to SF bay (lower), which is not impaired for sediment nor has the beneficial uses of COLD, MIGR, or SPWN. The receiving waters can be changed from high risk to low, thus lowering the project's risk level from 2 to 1.

This was approved by Kamran Nakhjiri, Water Pollution Control Senior.



Watershed Information

CALWATER WATERSHED

Hydrologic Unit	SOUTH BAY	Hydrologic Area	East Bay Cities	Hydrologic Sub-Area #	204.20
Hydrologic Sub-Area Name	undefined	Planning Watershed	2204200400	HSA Area (acres)	157396
Latitude, Longitude	37.6344, -122.1066				

WATERSHED BOUNDARY DATASET

Watershed	San Lorenzo Creek-Frontal San Francisco Bay Estuaries	Subwatershed	Ward Creek-Frontal San Francisco Bay Estuaries	Hydrologic Unit Code	180500040804
Average Annual Precipitation (inches)	18.47				

San Francisco Bay, Lower	Chlordane	92274 Acres	TMDL required
San Francisco Bay, Lower	DDT (Dichlorodiphenyltrichloroethane)	92274 Acres	TMDL required
San Francisco Bay, Lower	Dieldrin	92274 Acres	TMDL required
San Francisco Bay, Lower	Dioxin compounds (including 2,3,7,8-TCDD)	92274 Acres	TMDL required
San Francisco Bay, Lower	Furan Compounds	92274 Acres	TMDL required
San Francisco Bay, Lower	Invasive Species	92274 Acres	TMDL required
San Francisco Bay, Lower	Mercury	92274 Acres	Being addressed with USEPA approved TMDL
San Francisco Bay, Lower	PCBs (Polychlorinated biphenyls)	92274 Acres	TMDL required
San Francisco Bay, Lower	PCBs (Polychlorinated biphenyls) (dioxin-like)	92274 Acres	TMDL required
San Francisco Bay, Lower	Trash	92274 Acres	TMDL required
San Leandro Bay (part of SF Bay, Lower)	Chlordane	588.32 Acres	TMDL required
San Leandro Bay (part of SF Bay, Lower)	Dieldrin	588.32 Acres	TMDL required
San Leandro Bay (part of SF Bay, Lower)	Dioxin compounds (including 2,3,7,8-TCDD)	588.32 Acres	TMDL required
San Leandro Bay (part of SF Bay, Lower)	Furan Compounds	588.32 Acres	TMDL required
San Leandro Bay (part of SF Bay, Lower)	Invasive Species	588.32 Acres	TMDL required
San Leandro Bay (part of SF Bay, Lower)	Lead (sediment)	588.32 Acres	TMDL required
San Leandro Bay (part of SF Bay, Lower)	Mercury	588.32 Acres	Being addressed with USEPA approved TMDL
San Leandro Bay (part of SF Bay, Lower)	Mercury (sediment)	588.32 Acres	Being addressed with USEPA approved TMDL
San Leandro Bay (part of SF Bay, Lower)	PAHs (Polycyclic Aromatic Hydrocarbons) (sediment)	588.32 Acres	TMDL required
San Leandro Bay (part of SF Bay, Lower)	Pesticides (sediment)	588.32 Acres	TMDL required
San Leandro Bay (part of SF Bay, Lower)	Zinc (sediment)	588.32 Acres	TMDL required
San Leandro Creek, Lower	Diazinon	9.34 Miles	Being addressed with USEPA approved TMDL
San Leandro Creek, Lower	Trash	9.34 Miles	TMDL required
San Lorenzo Creek	Diazinon	11.08 Miles	Being addressed with USEPA approved TMDL

San Francisco Bay Lower	COMM, EST, IND, MIGR, NAV, RARE, REC1, REC2, SHELL, WILD	False
San Leandro Cr	COLD, FRSH, MIGR, REC1, REC2, SPWN, WARM, WILD	True
San Leandro Reservoir	COLD, MUN, REC1, REC2, SPWN, WARM, WILD	False
San Lorenzo Cr	COLD, FRSH, GWR, MIGR, MUN, REC1, REC2, SPWN, WARM, WILD	True